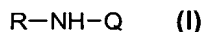


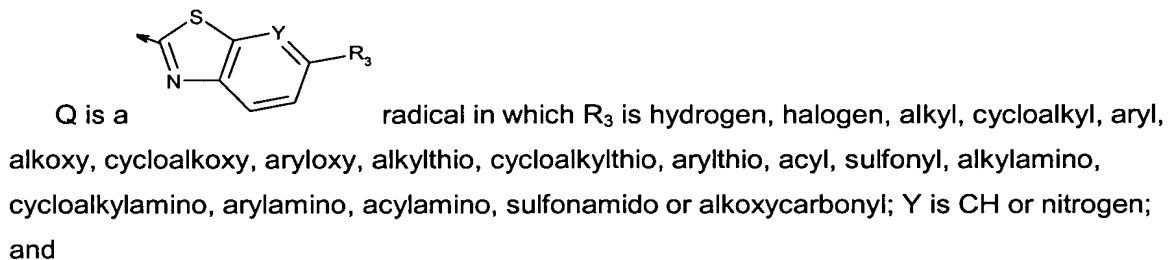
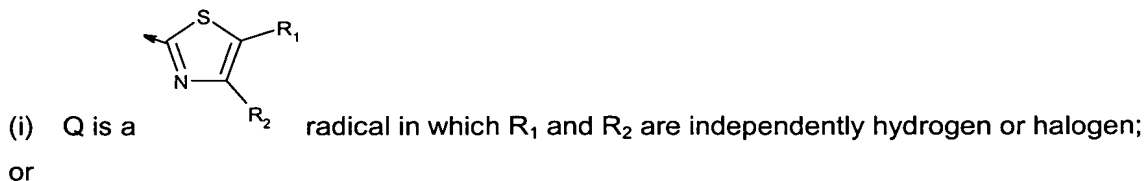
This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

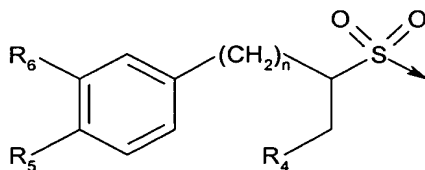
Claim 1 (original): A compound of the formula



wherein



R is a radical of the formula



wherein

R₄ is C₂₋₄alkyl, C₃₋₇cycloalkyl or C₅₋₇heterocycloalkyl;

R₅ and R₆ are independently hydrogen, halogen, cyano, R₇, -C(O)R₇ or -S(O)₂R₇ wherein

R₇ is -(CR₈R₉)_m-W-R₁₀ in which

R₈ and R₉ are independently hydrogen or lower alkyl;

W is a bond, O, S or -NR₁₁ in which

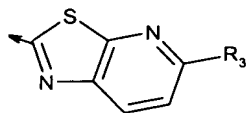
R₁₁ is hydrogen or lower alkyl;

R₁₀ is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R₁₀ and R₁₁, combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

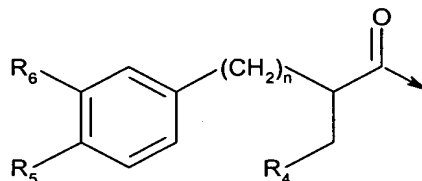
n is zero or an integer of 1 or 2;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof; or



(ii) Q is a radical in which R_3 is hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, acyl, sulfonyl, alkylamino, cycloalkylamino, arylamino, acylamino, sulfonamido or alkoxycarbonyl; and

R is a radical of the formula



wherein

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_5 and R_6 are independently hydrogen, halogen, cyano, R_7 , $-C(O)R_7$ or $-S(O)_2R_7$ wherein

R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which

R_8 and R_9 are independently hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

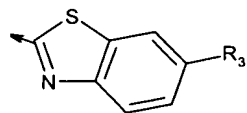
R_{11} is hydrogen or lower alkyl;

R_{10} is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R_{10} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

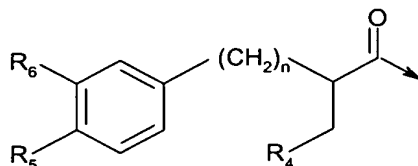
n is zero or an integer of 1 or 2;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof; or



(iii) Q is a radical in which R_3 is hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, acyl, sulfonyl, alkylamino, cycloalkylamino, arylamino, acylamino, sulfonamido or alkoxycarbonyl; and

R is a radical of the formula



wherein

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_5 and R_6 are independently hydrogen, halogen, cyano, R_7 , $-C(O)R_7$ or $-S(O)_2R_7$ wherein

R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which

R_8 and R_9 are independently hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

R_{11} is hydrogen or lower alkyl;

R_{10} is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R_{10} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

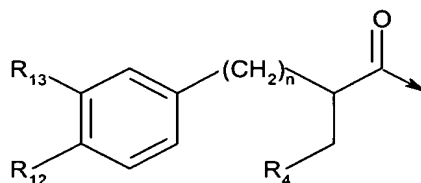
provided that: (1) R_5 and R_6 are not halogen when n is zero; or (2) R_5 is not $-S(O)_2R_7$, wherein R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which m is zero, W is a bond and R_{10} is C_{1-3} alkyl when n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof; or



(iv) Q is a radical, wherein R_1 and R_2 are independently hydrogen or halogen; and

R is a radical of the formula



wherein

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_{12} and R_{13} are independently hydrogen, halogen, cyano, R_{14} , $-C(O)R_{14}$, or $-S(O)_2R_{14}$ wherein

R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which

R_8 and R_9 are independently hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

R_{11} is hydrogen or lower alkyl;

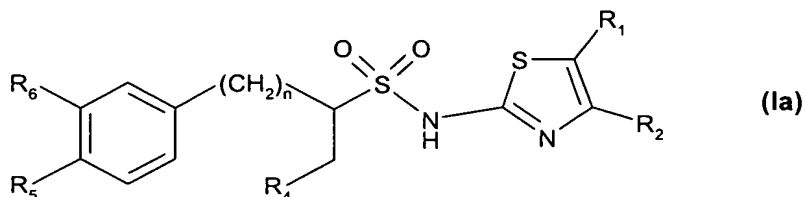
R_{15} is cycloalkyl, aryl or heterocyclyl; or R_{15} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

provided that: (1) R_{12} and R_{13} both are not hydrogen, halogen, cyano or combinations thereof; (2) R_{12} is not $-S(O)_2R_{14}$, wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is a bond when n is zero; (3) R_{12} is not $-S(O)_2R_{14}$, wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which R_8 and R_9 are hydrogen, m is 1 and W is a bond when n is zero; (4) R_{12} is not R_{14} , wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is O when n is zero; or (5) R_{12} is not R_{14} , wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is a bond when n is zero; or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 2 (original): A compound according to Claim 1 of the formula



wherein

R_1 and R_2 are independently hydrogen or halogen;

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_5 and R_6 are independently hydrogen, halogen, cyano, R_7 , $-C(O)R_7$ or $-S(O)_2R_7$ wherein

R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which

R_8 and R_9 are independently hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

R_{11} is hydrogen or lower alkyl;

R_{10} is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R_{10} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

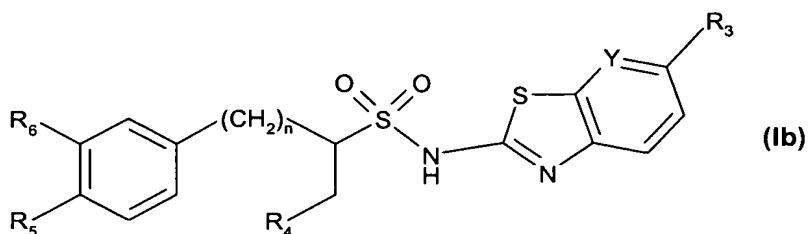
Claim 3 (original): A compound according to Claim 2, wherein

R_4 is cyclopentyl;

n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 4 (original): A compound according to Claim 1 of the formula



wherein

R_3 is hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, acyl, sulfonyl, alkylamino, cycloalkylamino, arylamino, acylamino, sulfonamido or alkoxycarbonyl;

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_5 and R_6 are independently hydrogen, halogen, cyano, R_7 , $-C(O)R_7$ or $-S(O)_2R_7$ wherein

R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which

R_8 and R_9 are, independently, hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which R_{11} is hydrogen or lower alkyl;

R_{10} is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R_{10} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

Y is CH or nitrogen;

n is zero or an integer of 1 or 2;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

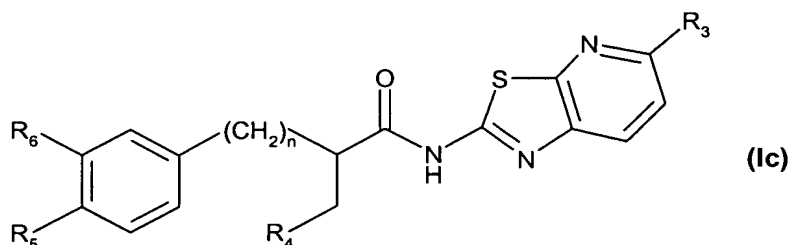
Claim 5 (original): A compound according to Claim 4, wherein

R_4 is cyclopentyl;

n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 6 (original): A compound according to Claim 1 of the formula



wherein

R₃ is hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, acyl, sulfonyl, alkylamino, cycloalkylamino, arylamino, acylamino, sulfonamido or alkoxycarbonyl;

R₄ is C₂₋₄alkyl, C₃₋₇cycloalkyl or C₅₋₇heterocycloalkyl;

R₅ and R₆ are independently hydrogen, halogen, cyano, R₇, -C(O)R₇ or -S(O)₂R₇ wherein

R₇ is -(CR₈R₉)_m-W-R₁₀ in which

R₈ and R₉ are, independently, hydrogen or lower alkyl;

W is a bond, O, S or -NR₁₁ in which

R₁₁ is hydrogen or lower alkyl;

R₁₀ is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R₁₀ and R₁₁, combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

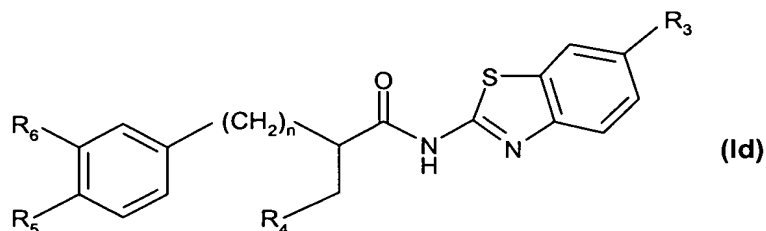
Claim 7 (original): A compound according to Claim 6, wherein

R₄ is cyclopentyl;

n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 8 (original): A compound according to Claim 1 of the formula



wherein

R₃ is hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, acyl, sulfonyl, alkylamino, cycloalkylamino, arylamino, acylamino, sulfonamido or alkoxycarbonyl;

R₄ is C₂₋₄alkyl, C₃₋₇cycloalkyl or C₅₋₇heterocycloalkyl;

R₅ and R₆ are independently hydrogen, halogen, cyano, R₇, -C(O)R₇, or -S(O)₂R₇ wherein

R₇ is -(CR₈R₉)_m-W-R₁₀ in which

R_8 and R_9 are, independently, hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

R_{11} is hydrogen or lower alkyl;

R_{10} is hydrogen, alkyl, cycloalkyl, aryl or heterocyclyl; or R_{10} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

provided that: (1) R_5 and R_6 are not halogen when n is zero; or (2) R_5 is not $-S(O)_2R_7$, wherein

R_7 is $-(CR_8R_9)_m-W-R_{10}$ in which m is zero, W is a bond and R_{10} is C_{1-3} alkyl when n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

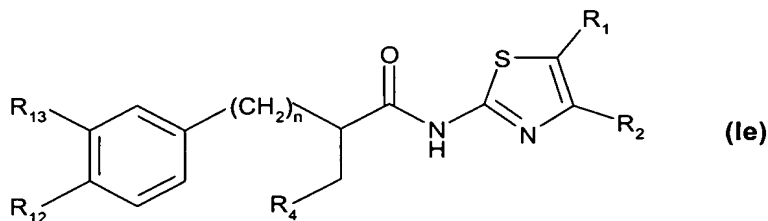
Claim 9 (original): A compound according to Claim 8, wherein

R_4 is cyclopentyl;

n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 10 (original): A compound according to Claim 1 of the formula



wherein

R_1 and R_2 are independently hydrogen or halogen;

R_4 is C_{2-4} alkyl, C_{3-7} cycloalkyl or C_{5-7} heterocycloalkyl;

R_{12} and R_{13} are independently hydrogen, halogen, cyano, R_{14} , $-C(O)R_{14}$, or $-S(O)_2R_{14}$

wherein

R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which

R_8 and R_9 are, independently, hydrogen or lower alkyl;

W is a bond, O, S or $-NR_{11}$ in which

R_{11} is hydrogen or lower alkyl;

R_{15} is cycloalkyl, aryl or heterocyclyl; or R_{15} and R_{11} , combined, are alkylene which together with the nitrogen atom to which they are attached form a 5- to 7-membered ring;

m is zero or an integer from 1 to 5;

n is zero or an integer of 1 or 2;

provided that: (1) R_{12} and R_{13} both are not hydrogen, halogen, cyano or combinations thereof; (2) R_{12} is not $-S(O)_2R_{14}$ wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is a bond when n is zero; (3) R_{12} is not $-S(O)_2R_{14}$, wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which R_8 and R_9 are hydrogen, m is 1 and W is a bond when n is zero; (4) R_{12} is not R_{14} , wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is O when n is zero; or (5) R_{12} is not R_{14} , wherein R_{14} is $-(CR_8R_9)_m-W-R_{15}$ in which m is zero and W is a bond when n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 11 (original): A compound according to Claim 10, wherein

R_4 is cyclopentyl;

n is zero;

or an optical isomer thereof; or a pharmaceutically acceptable salt thereof.

Claim 12 (original): A method for the activation of glucokinase activity in mammals which method comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 1.

Claim 13 (original): A method for the prevention and/or treatment of conditions associated with glucokinase activity in mammals which method comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 1.

Claim 14 (original): The method according to Claim 13, which method comprises administering said compound in combination with a therapeutically effective amount of insulin, insulin derivative or mimetic; insulin secretagogue; insulinotropic sulfonylurea receptor ligand; PPAR ligand; insulin sensitizer; biguanide; alpha-glucosidase inhibitors; GLP-1, GLP-1 analog or mimetic; DPPIV inhibitor; PTP-1B inhibitor; HMG-CoA reductase inhibitor; squalene synthase inhibitor; FXR or LXR ligand; cholestyramine; fibrates; nicotinic acid or aspirin.

Claim 15 (original): A method for the treatment of impaired glucose tolerance, Type 2 diabetes and obesity which method comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 1.

Claim 16 (original): A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 in combination with one or more pharmaceutically acceptable carriers.

Claim 17 (original): A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 in combination with a therapeutically effective amount of insulin, insulin derivative or mimetic; insulin secretagogue; insulinotropic sulfonylurea receptor ligand; PPAR ligand; insulin sensitizer; biguanide; alpha-glucosidase inhibitors; GLP-1, GLP-1 analog or mimetic; DPPIV inhibitor; HMG-CoA reductase inhibitor; squalene synthase inhibitor; FXR or LXR ligand; cholestyramine; fibrates; nicotinic acid; or aspirin.

Claim 18 (currently amended): A pharmaceutical composition according to claim 16 or 17 for the treatment of impaired glucose tolerance, Type 2 diabetes and obesity.

Claims 19 - 23 (cancelled)

Claim 24 (new): A pharmaceutical composition according to claim 17 for the treatment of impaired glucose tolerance, Type 2 diabetes and obesity.